



● Compliance with International Codes
● Compliance to State/Regional Codes

ICC-ES Evaluation Report

ESR-1078

Reissued January 2022

Revised September 2022

This report is subject to renewal January 2023.

DIVISION: 06 00 00—WOOD, PLASTICS AND COMPOSITES
Section: 06 05 23—Wood, Plastic, and Composite Fastenings

REPORT HOLDER:

OMG, INC.

ADDITIONAL LISTEE:

MITEK USA, INC.

EVALUATION SUBJECT:

FASTENMASTER® LOK SERIES STRUCTURAL WOOD SCREWS

1.0 EVALUATION SCOPE

Compliance with the following codes:

- 2021, 2018, 2015 and 2012 *International Building Code*® (IBC)
- 2021, 2018, 2015 and 2012 *International Residential Code*® (IRC)

For evaluation for compliance with codes adopted by the Los Angeles Department of Building and Safety (LADBS), see [ESR-1078 LABC and LARC Supplement](#).

Properties evaluated:

- Structural
- Corrosion resistance

2.0 USES

The FastenMaster LOK Series fasteners described in this report are used for wood-to-wood connections that are designed in accordance with the IBC. For structures regulated under the IRC, the fasteners may be used in engineered design in accordance with IRC Section R301.1.3.

The FastenMaster LOK Series fasteners described in Sections 3.1.1 through 3.1.5 are intended for use in the Exposure Conditions shown in Table 6.

3.0 DESCRIPTION

3.1 General:

The LOK Series fasteners described in this report are alternate dowel-type threaded fasteners designed to be installed in wood without drilling a lead hole. They are manufactured from carbon steel using a standard cold-forming process and are heat-treated.

3.1.1 OlyLog and TimberLOK Fasteners: The OlyLog and TimberLOK fasteners have a ⁵/₁₆-inch (7.9 mm) hex-head, rolled threads and a gimlet point. They have a proprietary corrosion-resistant coating with a lubricious clear top coat. See Table 1A for fastener dimensions and Figure 1 for an image of the fastener. TimberLOK Fasteners are sold under both the Fastenmaster® and Mitek names.

3.1.2 HeadLOK Fasteners: The HeadLOK fasteners have a flat head with proprietary #3 Spider-Drive, rolled threads and a gimlet point. They have a proprietary corrosion-resistant coating. See Table 1B for fastener dimensions and Figure 2 for an image of the fastener.

3.1.3 LedgerLOK Fasteners: The LedgerLOK fasteners have a ⁵/₁₆-inch (7.9 mm) hex-head with integral washer or a flat head with a Torx t-tap drive, rolled threads and a gimlet point. They have a proprietary corrosion-resistant coating with a lubricious clear top coat. See Table 1C for fastener dimensions and Figure 3 for images of the fasteners.

3.1.4 VersaLOK Fasteners: The VersaLOK fasteners have a flat head, rolled threads and a gimlet point. They have a proprietary corrosion-resistant coating with a lubricious clear top coat. See Table 1D for fastener dimensions and Figure 4 for an image of the fastener.

3.1.5 LogHog Fasteners: The LogHog fasteners have a ⁵/₁₆-inch (7.9 mm) hex-head with integral washer, rolled threads and a gimlet point. They have a proprietary corrosion-resistant coating. See Table 1E for fastener dimensions and Figure 5 for an image of the fastener.

3.1.6 ThruLOK Fasteners: The ThruLOK fasteners have a ⁵/₁₆-inch (7.9 mm) hex-head, rolled threads and a proprietary cutting point. The fasteners are coated with mechanically applied zinc in accordance with ASTM B695, Type I, Class 55. They are supplied with the ThruLOK washer and nut. See Table 1F for fastener dimensions and Figure 6 for an image of the fastener.

3.2 Wood Members:

For purposes of connection design, sawn lumber members must have an assigned specific gravity as indicated in the tables in this report. Assigned specific gravity for sawn lumber must be determined in accordance with Table 12.3.3A of the ANSI/AWC National Design Specification for Wood Construction® (NDS) (Table 11.3.3.A of the NDS-12 for the 2012 IBC). Unless otherwise noted, sawn lumber members must have a moisture content of 19 percent or less.

For the purposes of connection design, structural glued laminated timber (GL) must have a Specific Gravity for Fastener Design (addressed in Tables 5A through 5D of the NDS Supplement), as indicated in the tables in this report. Unless otherwise noted, GL must have a moisture content of less than 16 percent.

When designing connections with screws installed into the face of cross-laminated timber (CLT) panels fabricated with sawn lumber laminations, all of the laminations must have a minimum assigned specific gravity in accordance with the NDS as indicated in the tables in this report. Moisture content must be less than 16 percent.

Use of the screws in engineered wood products (EWP) other than those addressed above is outside the scope of this report.

Unless otherwise noted, the tabulated side member thickness for lateral loading is the tested thickness. The thickness of the wood main member must be equal to or greater than the screw length less the thickness of the side member.

4.0 DESIGN AND INSTALLATION

4.1 Design:

4.1.1 General: The design values in this report are intended to aid the designer in meeting the requirements of IBC Section 1604.2, but specific connection design capacities are outside the scope of this report. Determination of the suitability of the screws for the specific connection application is the responsibility of the designer. The designer is also responsible for determining the available strengths for the connection, considering all applicable limit states, and for considering serviceability issues.

This report provides the following design values:

- Measured bending yield strengths and fastener shear and tension strengths. See Tables 1A through 1F.
- Reference withdrawal design values, W_{90} , based on testing of screws installed perpendicular to the wood grain. See Table 2.
- Reference pull-through design values based on testing of screws installed perpendicular to the wood grain. See Table 3.
- Reference lateral design values for two-member wood-to-wood connections based on testing with screws installed perpendicular to the wood grain. See Table 4.

The report design values are for installation in wood where no splitting is observed.

4.1.2 Adjustments to Reference Design Values: The reference design values given in Tables 2 through 4 must be adjusted in accordance with the requirements for dowel-type fasteners in Section 11.3 of the NDS (Section 10.3 of NDS-12 for the 2012 IBC), including the wet service factor, C_M , where applicable. Reference head pull-through design

values must be adjusted in accordance with Section 11.3 of the 2018 NDS. When the capacity of a connection is controlled by the fastener strength, the allowable connection strength must not be increased by the adjustment factors specified in the NDS.

4.1.3 Governing Design Values: Typically, the allowable load for a single-screw connection in which the screw is subject to tension must be taken as the least of: (a) the reference withdrawal design value given in Table 2, multiplied by the embedded thread length, and adjusted by all applicable adjustment factors; (b) the reference head pull-through design value given in Table 3, adjusted by all applicable adjustment factors; and (c) the allowable screw tension strength given in Tables 1A through 1E. For the ThruLOK fastener assembly, the allowable tension load is governed by the head pull-through capacity shown in Table 3.

The allowable lateral load for a single-screw connection must be taken as the lesser of: (a) the reference lateral design value given in Table 4, adjusted by all applicable adjustment factors, and (b) the allowable screw shear strength given in Tables 1A through 1F.

4.1.4 Capacity Requirements for Wood Members: When designing a connection, the structural members must be checked for load-carrying capacity in accordance with Section 11.1.2 of the NDS (Section 10.1.2 of NDS-12 for the 2012 IBC), and local stresses within multiple-fastener connections must be checked against Appendix E of the NDS to ensure the capacity of the connection and fastener group.

4.1.5 Connections with Multiple Screws: Connections made with multiple screws must also be designed in accordance with Sections 11.2.2 and 12.6 of the NDS (Sections 10.2.2 and 11.6 of NDS-12 for the 2012 IBC).

4.1.6 Combined Loading: Where the screws are subjected to combined lateral and withdrawal loads, connections shall be designed in accordance with Section 12.4.1 of the NDS (Section 11.4.1 of NDS-12 for the 2012 IBC).

4.1.7 Corrosion Resistance: The FastenMaster LOK Series fasteners described in Sections 3.1.1 through 3.1.5 may be used as alternates to hot-dip galvanized fasteners prescribed in IBC Section 2304.10.6 (2018 and 2015 IBC Section 2304.10.5, 2012 IBC Section 2304.9.5), for use in wood chemically treated with waterborne alkaline copper quaternary, type D (ACQ-D), with a maximum retention of 0.40 pcf (6.4 kg/m³). These fasteners must be limited to use in exposure conditions described in Table 6.

4.2 Installation:

The fasteners must be installed in accordance with the report holder's published installation instructions and this report.

Lead holes are not required. Fasteners must be installed in accordance with the connection geometry requirements shown in Table 5.

The screws must be installed perpendicular to the face of the wood side member. The underside of the fastener head or integral washer must be flush with the surface of the wood side member. Screws must not be overdriven.

The ThruLOK fastener must be installed with the ThruLOK washer and nut (supplied with the fastener). The ThruLOK fastener must penetrate through the opposite face of the main member a sufficient distance to allow the nut to be tightened snugly against the main member, with at least

1/2 inch (12.7 mm) of the threaded portion of the shank engaging the internal threads of the nut.

5.0 CONDITIONS OF USE

The fasteners described in this report comply with, or are suitable alternatives to what is specified in, those codes listed in Section 1.0 of this report, subject to the following conditions:

- 5.1 Design and installation of connections with FastenMaster LOK Series fasteners must comply with this report, the manufacturer's published instructions and the applicable code. In the event of a conflict between the manufacturer's published installation instructions and this report, the more restrictive governs.
- 5.2 Design loads for the screws must not exceed the available strengths described in Section 4.1.
- 5.3 Calculations and details demonstrating compliance with this report must be submitted to the code official. The calculations and details must be prepared by a registered design professional where required by the statutes of the jurisdiction in which the project is to be constructed.
- 5.4 Use of the screws in lateral connections designed in accordance with the NDS is outside the scope of this report.
- 5.5 Use of the LOK series fasteners in locations exposed to saltwater or saltwater spray is outside the scope of this evaluation report.
- 5.6 Use of the ThruLOK fastener in contact with preservative-treated or fire-retardant-treated wood is outside the scope of this report.
- 5.7 The fasteners are manufactured under a quality control program with inspections by ICC-ES.

6.0 EVIDENCE SUBMITTED

- 6.1 Data in accordance with the ICC-ES Acceptance Criteria for Dowel-type Threaded Fasteners Used in Wood (AC233), dated February 2022.
- 6.2 Data in accordance with the ICC-ES Acceptance Criteria for Corrosion-resistant Fasteners and Evaluation of Corrosion Effects of Wood Treatments (AC257), dated October 2009 (editorially revised January 2021).

7.0 IDENTIFICATION

- 7.1 Packages of fasteners are identified by the company name (OMG or MiTek), the product name, the fastener size (length) and the evaluation report number (ESR-1078). Head markings on the fasteners indicate fastener length and are applied as noted in Tables 1A through 1F.
- 7.2 The report holder's contact information is the following:
OMG, INC.
153 BOWLES ROAD
AGAWAM, MASSACHUSETTS 01001-5008
(413) 789-0252
info@fastenmaster.com
www.fastenmaster.com
- 7.3 The additional listee's contact information is the following:
MiTek, USA, INC.
16023 SWINGLEY RIDGE ROAD
CHESTERFIELD, MISSOURI 63017
(314) 434-1200
www.mitek-us.com

TABLE 1A—OLYLOG AND TIMBERLOK FASTENER DIMENSIONS AND STRENGTHS

OLYLOG®/TIMBERLOK® FASTENER DESIGNATION	HEAD MARKING	OVERALL LENGTH, L ¹ (inches)	LENGTH OF THREAD, T ² (inches)	UNTHREADED SHANK DIAMETER, D _s (inch)	MINOR THREAD (ROOT) DIAMETER, D _r (inch)	OUTSIDE THREAD DIAMETER, D (inch)	BENDING YIELD STRENGTH ³ (F _{yb} , psi)	ALLOWABLE FASTENER STRENGTH	
								Tensile (lbf)	Shear ⁴ (lbf)
TLOK212 or LOG212	F2.5	2 1/2	1 1/4	0.189	0.172	0.260	167,300	1,300	940
TLOK04 or LOG004	F4.0	4	2						
TLOK06 or LOG006	F6.0	6	2						
TLOK08 or LOG008	F8.0	8	2				190,600	1,145	800
LOG009	F9.0	9	2						
TLOK10 or LOG010	F10.0	10	2						
LOG012	F12.0	12	2						
LOG014	F14.0	14	2						
LOG016	F16.0	16	2						

For SI: 1 inch = 25.4 mm, 1 lbf = 4.45 N, 1 psi = 6.895 kPa.

¹Measured as shown in the figure below.

²Length of thread includes tip. See detailed figure below.

³Bending yield strength determined per methods specified in ASTM F1575 based on D_r.

⁴Allowable shear strength values apply only to shearing in the unthreaded shank portion of the fastener.

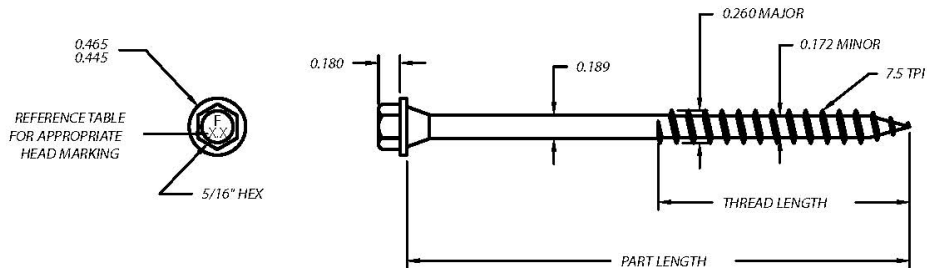


FIGURE 1—OLYLOG/TIMBERLOK FASTENER

TABLE 1B—HEADLOK FASTENER DIMENSIONS AND STRENGTHS

HEADLOK® FASTENER DESIGNATION	HEAD MARKING	OVERALL LENGTH, L ¹ (inches)	LENGTH OF THREAD, T ² (inches)	UNTHREADED SHANK DIAMETER, D _s (inch)	MINOR THREAD (ROOT) DIAMETER, D _r (inch)	OUTSIDE THREAD DIAMETER, D (inch)	BENDING YIELD STRENGTH ³ (F _{yb} , psi)	ALLOWABLE FASTENER STRENGTH	
								Tensile (lbf)	Shear ⁴ (lbf)
HLGM278	F2.9 HL	2 7/8	2	0.191	0.172	0.260	187,300	1,215	965
HLGM412	F4.5 HL	4 1/2	2						
HLGM6	F6.0 HL	6	2						
HLGM8	F8.0 HL	8	2						
HLGM10	F10 HL	10	2						

For SI: 1 inch = 25.4 mm, 1 lbf = 4.45 N, 1 psi = 6.895 kPa.

¹Measured as shown in the figure below.

²Length of thread includes tip. See detailed figure below.

³Bending yield strength determined per methods specified in ASTM F1575 based on D_r.

⁴Allowable shear strength values apply only to shearing in the unthreaded shank portion of the fastener.

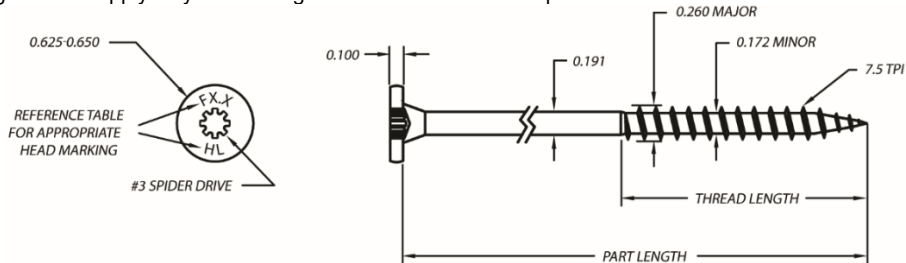


FIGURE 2—HEADLOK FASTENER

TABLE 1C—LEDGERLOK FASTENER DIMENSIONS AND STRENGTHS

LEDGERLOK® FASTENER DESIGNATION	HEAD STYLE	HEAD MARKING	OVERALL LENGTH, L ¹ (inches)	LENGTH OF THREAD, T ² (inches)	UNTHREADED SHANK DIAMETER, D _s (inch)	MINOR THREAD (ROOT) DIAMETER, D _r (inch)	OUTSIDE THREAD DIAMETER, D (inch)	BENDING YIELD STRENGTH ³ (F _{yb} , psi)	ALLOWABLE FASTENER STRENGTH	
									Tensile (lbf)	Shear ⁴ (lbf)
LL358	Hex Washer	F3.6	3 ⁵ / ₈	2	0.228	0.202	0.305	200,700	1,833	1,235
LL005		F5.0	5	3						
LLF358	Flat	LLF3.6	3 ⁵ / ₈	2						
LLF005		LLF5.0	5	3						

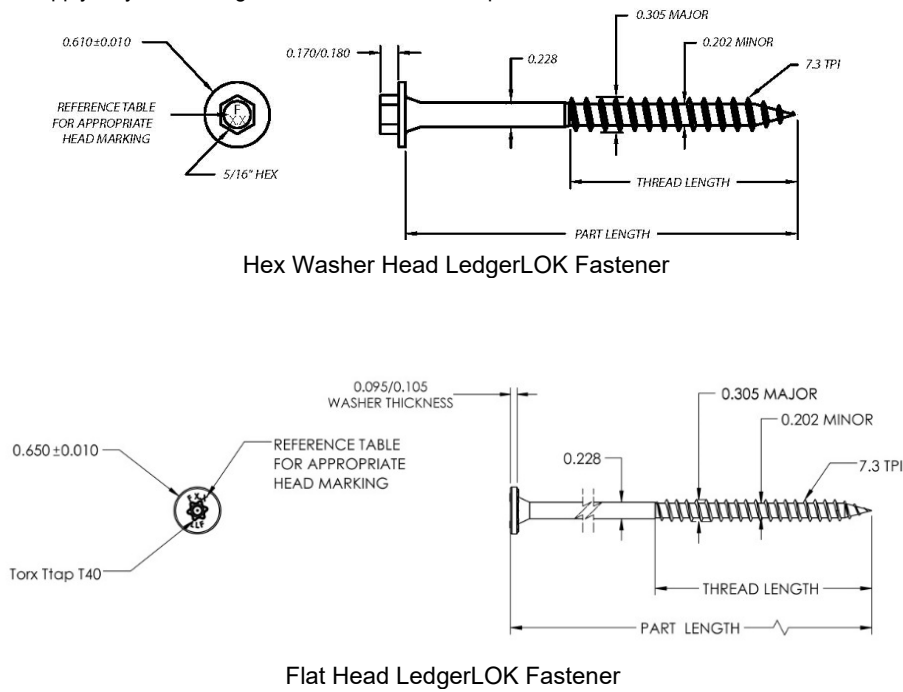
For SI: 1 inch = 25.4 mm, 1 lbf = 4.45 N, 1 psi = 6.895 kPa.

¹Measured as shown in the figures below.

²Length of thread includes tip. See detailed figure below.

³Bending yield strength determined per methods specified in ASTM F1575 based on D_r.

⁴Allowable shear strength values apply only to shearing in the unthreaded shank portion of the fastener.



Hex Washer Head LedgerLOK Fastener

Flat Head LedgerLOK Fastener

FIGURE 3—LEDGERLOK FASTENERS

TABLE 1D—VERSALOK FASTENER DIMENSIONS AND STRENGTHS

VERSALOK® FASTENER DESIGNATION	HEAD MARKING	OVERALL LENGTH, L ¹ (inches)	LENGTH OF THREAD, T ² (inches)	UNTHREADED SHANK DIAMETER, D _s (inch)	MINOR THREAD (ROOT) DIAMETER, D _r (inch)	OUTSIDE THREAD DIAMETER, D (inch)	BENDING YIELD STRENGTH ³ (F _{yb} , psi)	ALLOWABLE FASTENER STRENGTH	
								Tensile (lbf)	Shear ⁴ (lbf)
VLOK006	F6.0 VL	6	3	0.228	0.202	0.305	200,700	1,833	1,235
VLOK008	F8.0 VL	8	3						
VLOK010	F10.0 VL	10	3						

For SI: 1 inch = 25.4 mm, 1 lbf = 4.45 N, 1 psi = 6.895 kPa.

¹Measured as shown in the figures below.

²Length of thread includes tip. See detailed figure below.

³Bending yield strength determined per methods specified in ASTM F1575 based on D_r.

⁴Allowable shear strength values apply only to shearing in the unthreaded shank portion of the fastener.

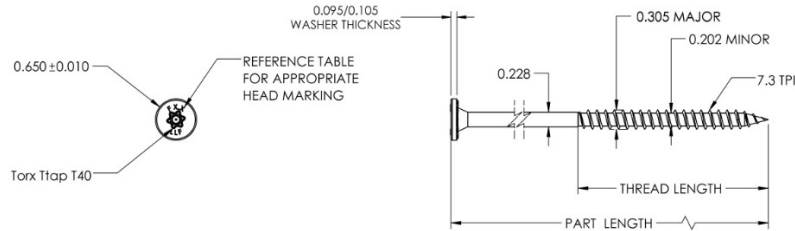


FIGURE 4—VERSALOK FASTENER

TABLE 1E—LOGHOG FASTENER DIMENSIONS AND STRENGTHS

LOGHOG® FASTENER DESIGNATION	HEAD MARKING	OVERALL LENGTH, L ¹ (inches)	LENGTH OF THREAD, T ² (inches)	UNTHREADED SHANK DIAMETER, D _s (inch)	MINOR THREAD (ROOT) DIAMETER, D _r (inch)	OUTSIDE THREAD DIAMETER, D (inch)	BENDING YIELD STRENGTH ³ (F _{yb} , psi)	ALLOWABLE FASTENER STRENGTH	
								Tensile (lbf)	Shear ⁴ (lbf)
LHOG009	F9.0	9	3	0.228	0.202	0.305	183,200	1,335	890
LHOG011	F11.0	11	3						
LHOG013	F13.0	13	3						
LHOG015	F15.0	15	3						

For SI: 1 inch = 25.4 mm, 1 lbf = 4.45 N, 1 psi = 6.895 kPa.

¹Measured from the underside of head to the tip, as shown in the figure below.

²Length of thread includes tip. See detailed figure below.

³Bending yield strength determined per methods specified in ASTM F1575 based on D_r.

⁴Allowable shear strength values apply only to shearing in the unthreaded shank portion of the fastener.

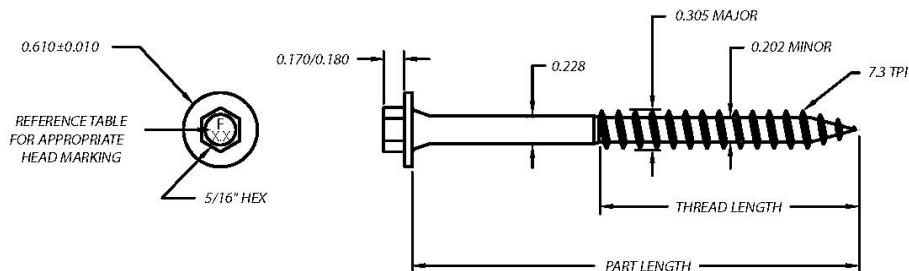


FIGURE 5—LOGHOG FASTENER

TABLE 1F—THRULOK FASTENER DIMENSIONS AND STRENGTHS⁵

THRULOK® FASTENER DESIGNATION	HEAD MARKING	OVERALL LENGTH, L ¹ (inches)	LENGTH OF THREAD, T ² (inches)		UNTHREADED SHANK DIAMETER, D _s (inch)	MINOR THREAD (ROOT) DIAMETER, D _r (inch)	OUTSIDE THREAD DIAMETER, D (inch)	BENDING YIELD STRENGTH ³ (F _{yb} , psi)	ALLOWABLE FASTENER STRENGTH	
			A	B					Tensile (lbf)	Shear ⁴ (lbf)
THR614	FT6.2	6 ¹ / ₄	9 ⁹ / ₁₆	1 ³ / ₁₆	0.228	0.201	0.310	218,400	1,970	1,235
THR007	FT7.0	7								
THR008	FT8.0	8								
THR912	FT9.5	9 ¹ / ₂								

For SI: 1 inch = 25.4 mm, 1 lbf = 4.45 N, 1 psi = 6.895 kPa.

¹Measured from the underside of head to the tip, as shown in the figure below.

²The thread lengths given for the ThruLOK are for zones A and B, as depicted in the diagram below. The total length from the start of Zone A to the fastener tip is 2³/₈ inches. ³Bending yield strength determined per methods specified in ASTM F1575 based on D_r.

⁴Allowable shear strength values apply only to shearing in the unthreaded shank portion of the fastener.

⁵The ThruLOK fastener must be used with the ThruLOK washer and nut (supplied with the fastener).

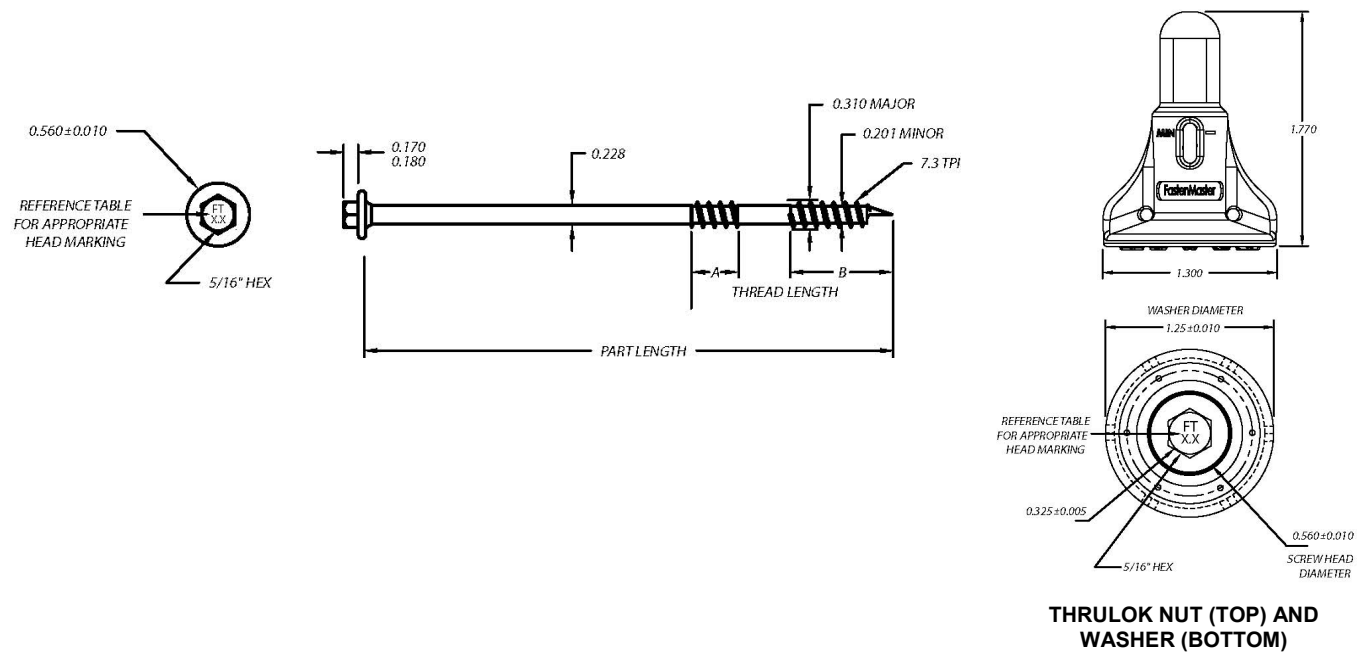


FIGURE 6—THRULOK FASTENER

TABLE 2—REFERENCE WITHDRAWAL DESIGN VALUES FOR INSTALLATION INTO THE FACE OF THE WOOD MEMBER¹

FASTENER	MINIMUM EMBEDDED THREAD LENGTH (inches)	W_{90} (lbf./in.) FOR SPECIFIC GRAVITIES OF:					
		0.57	0.55	0.5	0.46	0.43	0.42
OlyLog/ TimberLOK	1.25	270	260	220	200	180	170
HeadLOK	2.0	290	270	230	200	180	170
LedgerLOK, VersaLOK, LogHog	2.0	330	310	270	240	220	210
ThruLOK	n/a	See Note 2					

For **SI**: 1 inch = 25.4 mm, 1 lbf/in = 0.175 N/mm.

¹Tabulated reference withdrawal design values apply to fasteners installed at 90 degrees to the face of the wood member.

²For the ThruLOK screws, withdrawal resistance is provided by the nut installed on the backside of the connection, which is greater than the head pull-through design value shown in Table 3.

TABLE 3—REFERENCE HEAD PULL-THROUGH DESIGN VALUES (W_H)

FASTENER	MINIMUM SIDE MEMBER THICKNESS (inches)	W_H (lbf) FOR SPECIFIC GRAVITIES OF:					
		0.57	0.55	0.5	0.46	0.43	0.42
OlyLog/ TimberLOK	1.5	220	200	160	130	110	110
HeadLOK	1.5	630	600	520	460	410	400
LedgerLOK, VersaLOK, LogHog	1.5	320	290	240	200	180	170
ThruLOK	1.5	1140	1060	900	780	700	680

For **SI**: 1 inch = 25.4 mm, 1 lbf = 4.45 kPa.

TABLE 4—REFERENCE LATERAL DESIGN VALUES (Z) FOR SINGLE SHEAR (TWO-MEMBER) WOOD-TO-WOOD CONNECTIONS LOADED PARALLEL (Z_{||}) OR PERPENDICULAR (Z_⊥) TO THE GRAIN¹

FASTENER		SIDE MEMBER THICKNESS ² , (inches)	MINIMUM MAIN MEMBER PENETRATION ³ , (inches)	Z (lbf) FOR MINIMUM SPECIFIC GRAVITIES OF:					
Designation	Minimum Overall Length (inches)			0.5		0.46		0.42	
				Z	Z _⊥	Z	Z _⊥	Z	Z _⊥
OlyLog/ TimberLOK	2 1/2 ⁴	1 1/2	1	240	220	220	200	200	180
	4	1 1/2	2 1/2	280	260	260	230	240	210
	6	2 1/2	3 1/2	290	270	270	250	250	230
	8	3	5	290	270	260	250	240	230
HeadLOK	2 7/8 ⁴	1 1/2	1 3/8	240	210	220	180	210	150
	4 1/2	1 1/2	3	280	260	260	240	250	220
	6	1 1/2	4 1/2	290	270	270	250	250	230
	6	2 1/2	3 1/2	300	280	280	260	270	240
	8	3	5	290	280	280	260	260	230
LedgerLOK	3 5/8 ⁷	1 1/2 ⁵	1 ⁶	—	300	—	—	—	—
	3 5/8	1 1/2	1 1/2 ⁶	—	260	—	220	—	220
	3 5/8	1 1/2	2 1/8	310	310	290	280	270	250
	5	1 1/2	3 1/2	320	300	300	280	280	260
VersaLOK	6	1 1/2	4 1/2	320	300	300	280	280	260
LogHog	9 & longer	6	3	310	300	290	280	270	260
ThruLOK	6 1/4	1 1/2	3 1/4	350	320	320	300	300	270
	7	1 1/2	4	350	330	320	300	300	270
	8	3	3 1/2	350	330	320	300	300	270
	9 1/2	1 1/2	6 1/2	350	330	320	300	300	270

For **SI**: 1 inch = 25.4 mm, 1 lbf = 4.45 kPa.

¹Tabulated reference lateral design values, Z, apply to single shear (two-member) connections with wood main and side members having specific gravity as shown, in which the screw is oriented perpendicular to the grain and loaded laterally either parallel or perpendicular to the grain. For connections in which the main and side members have different specific gravities, use the tabulated values applicable to the lower of the two. Gaps are not permitted between the main and side members.

²Unless otherwise noted, side members with thicknesses greater than the tabulated minimum side member thickness may be used, provided the corresponding tabulated minimum main member penetration is still achieved.

³Minimum main member penetration is the minimum length of the screw (including threaded, unthreaded and tip length) that must be embedded within the main member. The entire threaded portion of the screw must be embedded in the main member, unless otherwise noted.

⁴Full embedment of the threaded portion of the screw in the main member is not required.

⁵Side member thickness must not be increased.

⁶Thickness of main member. Fastener must penetrate through the main member.

⁷For connection of 1 1/2 inch wood side member with specific gravity of 0.50 to minimum 1 inch thick rimboard. Rimboard consists of laminated strand lumber (LSL) with an equivalent specific gravity of 0.50. Fastener must penetrate through the rimboard.

TABLE 5—CONNECTION GEOMETRY REQUIREMENTS¹

CONDITION		MINIMUM DISTANCE OR SPACING (inches)				
		TimberLOK, OlyLOG and HeadLOK		LedgerLOK, VersaLOK, LogHog and ThruLOK		
		SG < 0.50	SG ≥ 0.50	SG < 0.50	SG ≥ 0.50	
End Distance	Tension Loading Parallel to Grain (fastener bearing toward end)		3	3	3 ³ / ₄	3 ³ / ₄
	Compression Loading Parallel to Grain (fastener bearing away from end)		2 ⁵ / ₈	3	3 ¹ / ₈	3 ³ / ₄
	Loading Perpendicular to Grain		2 ⁵ / ₈	3	3 ¹ / ₈	3 ³ / ₄
	Axial Loading (fastener withdrawal or head pull-through)		2 ⁵ / ₈	2 ⁵ / ₈	3 ¹ / ₈	3 ¹ / ₈
Edge Distance	Loading Parallel to Grain		1 ³ / ₄	1 ³ / ₄	2	2
	Loading Perpendicular to Grain	Loading Toward Edge	1 ³ / ₄	1 ³ / ₄	2	2
		Loading Away from Edge	1 ³ / ₈	1 ³ / ₄	1 ¹ / ₂	2
	Axial Loading		1	1	1 ¹ / ₄	1 ¹ / ₄
Spacing Between Fasteners in a Row (para to grain of MM)	Loading Parallel to Grain		4	4	4 ⁵ / ₈	4 ⁵ / ₈
	Loading Perpendicular to Grain		2 ⁵ / ₈	2 ⁵ / ₈	3 ¹ / ₈	3 ¹ / ₈
	Axial Loading		1 ⁷ / ₈	1 ⁷ / ₈	2 ¹ / ₈	2 ¹ / ₈
Spacing Between Rows (perp to grain of MM)	Lateral Loading	In-Line Rows	1 ³ / ₈	1 ⁷ / ₈	1 ¹ / ₂	2 ¹ / ₈
		Staggered Rows ³	³ / ₄	³ / ₄	³ / ₄	1
	Axial Loading		1	1	1 ¹ / ₄	1 ¹ / ₄

For **SI**: 1 inch = 25.4 mm.

¹End distances, edge distances and screw spacing must be sufficient to prevent splitting of the wood, or as required by this table, whichever is more restrictive.

²Wood member stresses must be checked in accordance with Section 11.1.2 and Appendix E of the NDS, and end distances, edge distances and fastener spacing may need to be increased accordingly.

⁴Values for spacing between staggered rows apply where screws in adjacent rows are offset by half of the spacing between screws in a row.

TABLE 6—EXPOSURE CONDITIONS FOR FASTENMASTER LOK SERIES FASTENERS WITH PROPRIETARY COATING¹

EXPOSURE CONDITION	TYPICAL APPLICATIONS	LIMITATIONS
1	Treated wood in dry use applications	Limited to use where equilibrium moisture content of the chemically treated wood meets the dry service conditions as described in the NDS.
3	General construction	Limited to freshwater and chemically treated wood exposure, e.g., no saltwater exposure.

¹Applicable to FastenMaster LOK Series fasteners described in Sections 3.1.1 through 3.1.5 of this report.

DIVISION: 06 00 00—WOOD, PLASTICS AND COMPOSITES

Section: 06 05 23—Wood, Plastic, and Composite Fastenings

REPORT HOLDER:

OMG, INC.

EVALUATION SUBJECT:

FASTENMASTER® LOK SERIES STRUCTURAL WOOD SCREWS

1.0 REPORT PURPOSE AND SCOPE

Purpose:

The purpose of this evaluation report supplement is to indicate that the Fastenmaster® Lok Series Structural Wood Screws, described in ICC-ES evaluation report [ESR-1078](#), have also been evaluated for compliance with the codes noted below as adopted by the Los Angeles Department of Building and Safety (LADBS).

Applicable code editions:

- 2020 *City of Los Angeles Building Code* (LABC)
- 2020 *City of Los Angeles Residential Code* (LARC)

2.0 CONCLUSIONS

The Fastenmaster® Lok Series Structural Wood Screws, described in Sections 2.0 through 7.0 of the evaluation report [ESR-1078](#), comply with the LABC Chapter 23, and the LARC, and are subjected to the conditions of use described in this supplement.

3.0 CONDITIONS OF USE

The Fastenmaster® Lok Series Structural Wood Screws described in this evaluation report must comply with all of the following conditions:

- All applicable sections in the evaluation report [ESR-1078](#).
- The design, installation, conditions of use and identification of the Fastenmaster® Lok Series Structural Wood Screws are in accordance with the 2018 *International Building Code*® (IBC) provisions noted in the evaluation report [ESR-1078](#).
- The design, installation and inspection are in accordance with additional requirements of LABC Chapters 16, 17, and 23, as applicable.
- The screws are not approved for installations in contact with fire-retardant treated lumber in exterior applications.
- Under the LARC, an engineered design in accordance with LARC Section R301.1.3 must be submitted.

This supplement expires concurrently with the evaluation report, reissued January 2022, and revised September 2022.

DIVISION: 06 00 00—WOOD, PLASTICS AND COMPOSITES
Section: 06 05 23—Wood, Plastic, and Composite Fastenings

REPORT HOLDER:

OMG, INC.

EVALUATION SUBJECT:

FASTENMASTER® LOK SERIES STRUCTURAL WOOD SCREWS

1.0 REPORT PURPOSE AND SCOPE**Purpose:**

The purpose of this evaluation report supplement is to indicate that the FastenMaster LOK Series fasteners, described in ICC-ES evaluation report ESR-1078, have also been evaluated for compliance with the codes noted below.

Applicable code edition(s):

- 2019 *California Building Code* (CBC)

For evaluation of applicable chapters adopted by the California Office of Statewide Health Planning and Development (OSHPD) AKA: California Department of Health Care Access and Information (HCAI) and the Division of State Architect (DSA), see Sections 2.1.1 and 2.1.2 below.

- 2019 *California Residential Code* (CRC)

2.0 CONCLUSIONS**2.1 CBC:**

The FastenMaster LOK Series fasteners, described in Sections 2.0 through 7.0 of the evaluation report ESR-1078, comply with CBC Chapter 23, provided the design and installation are in accordance with the 2018 *International Building Code*® (IBC) provisions noted in the evaluation report and the additional requirements of CBC Chapter 16, as applicable.

2.1.1 OSHPD (HCAI):

The applicable OSHPD (HCAI) Sections and Chapters of the CBC are beyond the scope of this supplement.

2.1.2 DSA:

The applicable DSA Sections and Chapters of the CBC are beyond the scope of this supplement.

2.2 CRC:

The FastenMaster LOK Series fasteners, described in Sections 2.0 through 7.0 of the evaluation report ESR-1078, comply with CRC Chapter 3, provided the design and installation are in accordance with the 2018 *International Residential Code*® (IRC) provisions noted in the evaluation report.

This supplement expires concurrently with the evaluation report, reissued January 2022 and revised September 2022.

DIVISION: 06 00 00—WOOD, PLASTICS AND COMPOSITES
Section: 06 05 23—Wood, Plastic, and Composite Fastenings

REPORT HOLDER:

OMG, INC.

EVALUATION SUBJECT:

FASTENMASTER® LOK SERIES STRUCTURAL WOOD SCREWS

1.0 REPORT PURPOSE AND SCOPE

Purpose:

The purpose of this evaluation report supplement is to indicate that FastenMaster LOK Series fasteners, described in ICC-ES evaluation report ESR-1078, have also been evaluated for compliance with the codes noted below.

Applicable code editions:

- 2020 Florida Building Code—Building
- 2020 Florida Building Code—Residential

2.0 CONCLUSIONS

The FastenMaster LOK Series fasteners, described in Sections 2.0 through 7.0 of the evaluation report ESR-1078, comply with the *Florida Building Code—Building* and the *Florida Building Code—Residential*. The design requirements must be determined in accordance with the *Florida Building Code—Building* and the *Florida Building Code—Residential*, as applicable. The installation requirements noted in ICC-ES evaluation report ESR-1078 for the 2018 *International Building Code*® meet the requirements of the *Florida Building Code—Building* and the *Florida Building Code—Residential*, as applicable.

Use of the FastenMaster LOK Series fasteners for compliance with the High-Velocity Hurricane Zone provisions of the *Florida Building Code—Building* and the *Florida Building Code—Residential* has not been evaluated, and is outside the scope of this evaluation report.

For products falling under Florida Rule 61G20-3, verification that the report holder's quality assurance program is audited by a quality assurance entity approved by the Florida Building Commission for the type of inspections being conducted is the responsibility of an approved validation entity (or the code official when the report holder does not possess an approval by the Commission).

This supplement expires concurrently with the evaluation report, reissued January 2022 and revised September 2022.